PROFESSIONAL DUAL FUEL RANGES

NATURAL GAS & LP GAS MODELS

ZDP36 and ZDP48

IMPORTANT SERVICE INFORMATION

DO NOT DISCARD

IMPORTANT SAFETY NOTICE: This information is intended for use by individuals possessing adequate backgrounds of electrical, electronic and mechanical experience. Any attempt to repair any major appliance may result in personal injury and property damage. Neither the manufacturer nor the seller can be responsible for the interpretation of this information or assume any liability in connection with its use.

DISCONNECT POWER BEFORE SERVICING

IMPORTANT: RECONNECT ALL GROUNDING DEVICES. All parts of this appliance capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

NOTE: Installation information for reference only. See Installation Instructions shipped with product for complete details and before attempting to install. Anti-tip bracket must be attached to the floor or wall to hold either right or left rear leg leveler. Make sure leg leveler reengages the bracket when range is moved for any reason.

GAS REQUIREMENTS

GAS SUPPLY REQUIREMENTS		
GAS TYPE	INCOMING PRESSURE TO REGULATOR	PRESSURE REGULATOR OUTPUT SUPPLIES
Natural	6.0″ to 14.0″ W.C.P.	5.0″ W.C.P.
L.P.	11″ to 14″ W.C.P.	10.0″ W.C.P.

Recommended Minimum Regulator Input Pressures to Maximize Performance:
Natural Gas – 7.0″ W.C.P.
L.P. Gas – 12.0″ W.C.P.

ELECTRICAL REQUIREMENTS

Grounding

Ground Path Resistance 0.10 Ω Max.
Insulation Resistance 250 KΩ Min.

Power Supply

This appliance must be supplied with proper voltage and frequency and connected to an individual, properly grounded branch circuit breaker or time-delay fuse as noted on the rating plate. Wiring must conform to the National Electrical Code. The rating plate is located on the lower front frame behind the oven door.

OVERCURRENT PROTECTION – ZDP48

NEC FUSE RATING	AMPERAGE & MAXIMUM KILOWATT RATING	
	208V	240V
50 Amp	34.6 A/7.2 kW	41.0 A/9.8 kW

OVERCURRENT PROTECTION – ZDP36

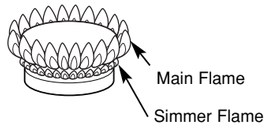
NEC FUSE RATING	AMPERAGE & MAXIMUM KILOWATT RATING	
	208V	240V
30 Amp	18.7 A/3.9 kW	22.2 A/5.3 kW

GAS SHUT-OFF VALVE

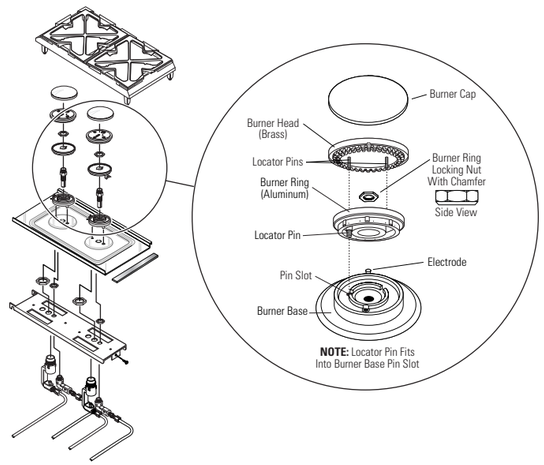
This range is equipped with a gas shut-off valve located behind the kick plate. This valve is to be used in the event that service is required in the future.

CHECK FLAME CHARACTERISTICS

Burner flames should be blue and stable with no yellow or yellow tips, excessive noise or lifting of the flame from the burner. If any of these conditions exist, check that the burner ports are not blocked.



BURNER DISASSEMBLY



SURFACE BURNER REMOVAL

1. Lift off the burner cap and burner head.
2. Remove the burner ring locking nut using a 1-1/16″ socket wrench, crescent wrench or channel-lock pliers.
3. Lift off the burner ring. **Do not remove the burner base.**

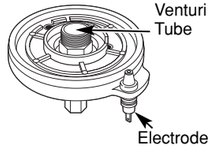
To replace:

1. Align the locator pins on the burner ring into the labeled hole in the burner base. Seat in place and push toward the electrode to set gap properly.
2. Replace the burner ring locking nut. Tighten the nut three times to remove small imperfections in the parts. This will ensure the nut remains tight over life:
   - Hand tighten nut, tighten 1/4 turn with wrench or pliers, then loosen.
   - Hand tighten nut a second time, tighten 1/4 turn with wrench or pliers, then loosen.
   - Hand tighten nut and final tighten 1/4 turn with wrench or pliers.
3. Align the locator pin in the burner head into the hole in the burner ring. Seat in place.
4. Replace the burner caps.

BURNER BASE REMOVAL

To remove:

1. Remove the venturi tube from the center of the burner base using a 3/4″ socket wrench, crescent wrench or channel-lock pliers.
2. Lift the burner base off the cooktop and pull the wire from the tip of the electrode.



To replace:

1. Slide the wire back onto the tip of the burner electrode and lower the base back onto the cooktop.
2. Replace the venturi tube back in the center of the burner base and hand tighten. Using the wrench or pliers, tighten the venturi tube 1-1/2 turns.

SURFACE BURNER ADJUSTMENTS

Standard adjustments to the air shutter and gas metering orifices are not possible on sealed burners.

If burner flames appear to be abnormal, check the following:

- Check gas pressure available to the burners. The required operating pressure is 5″ W.C.P. Natural Gas or 10″ W.C.P. L.P. (Propane) Gas.
- Check for drafts entering the burner box from behind the cooktop.
- Check for blockage or partial blockage of the orifice. Inspect the orifice to be sure it has been drilled on center and is free of debris or burrs.
- Check the burner alignment per the “Burner Alignment” section of this manual.
- If the cause of the problem cannot be found, installing an orifice with smaller diameter openings may solve the problem. In high altitude (above 6000 ft.) installation, the orifices will usually have to be downsized.

ORIFICE/JET SIZES

ORIFICE/JET SIZES

BURNER	GAS	ORIFICE (mm) MAIN	SIMMER	Valve	RATE (BTU/HR) HI	LO	SIM	MAIN ORIFICE CODE	SIMMER ORIFICE CODE
D BURNER	NG	1.85	0.57	0.57	17k	2700	1300	185	P
D BURNER	LP	1.1	0.34	0.57	15k	2500	1200	118	E
GRILL/GRIDDLE	NG	1.93	——	1.51	18k	6000	——	48	——
GRILL/GRIDDLE	LP	1.18	——	0.94	15k	6000	——	56	——

HIGH ALTITUDE CONVERSION

Recommended Orifice Size for High Altitude Installation

BURNER	GAS	Sea Level MAIN Orifice (mm)	3000 ft.	6000 ft.
D BURNER	NG	1.85	1.78	1.61
D BURNER	LP	1.1	1.04	0.99
GRILL/GRIDDLE	NG	1.93	1.85	1.70
GRILL/GRIDDLE	LP	1.18	1.09	1.07

NOTE:

1. Equivalent Orifice Sizes at High Altitudes (4% input reduction for each 1,000 ft.).
2. Only main orifice is changed to derate burner at altitude.
3. Codes are stamped on orifice.

ORIFICE CONVERSION KITS

Burner orifice conversion kits are available for:

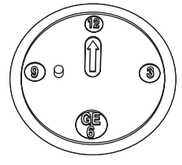
- Converting burner orifices from LP to Natural Gas and from Natural Gas to LP
- Installation at high altitudes

Natural/LP Conversion Kit – WB49X10132
LP/Natural Conversion Kit – Order part number WB49X10133
High Altitude Conversion Kit – Order part number WB49X10130

BURNER ALIGNMENT

Burner alignment is very important for proper operation. Make sure the locator pin on the Burner Ring is properly aligned with the hole on the Burner Base.

Each brass Burner Head is marked with a clock face. Replace the Burner Head with the arrow pointing to the rear of the cooktop (12 o’clock position).



CHECK PROPER IGNITION

All the igniters make clicking sounds and spark even when only a single burner is being turned on. Do not touch any of the burners when the igniters are clicking.

1. Push in one control knob and turn 90° to LITE position.
2. The igniter will spark and the burner will light; the igniter will cease sparking when the burner is lit.
3. First test may require some time while air is flushed out of the gas line.
4. Turn knob to OFF.
5. Repeat the procedure for each burner.

SPARKING

- Input voltage should be between 204 and 264 VAC and the ground line should be properly connected to the range chassis. Voltage should be measured on one leg of the power supply.
- If the igniter electrodes continue to spark after the burners are lit, check that each burner component is assembled and seated properly by observing constant gaps between each layer. Disassemble and reassemble as required.
- If water spills onto the electrode, the burner will not re-ignite. The wet electrode will conduct spark energy to ground, preventing it from sparking or sensing flame across the spark gap. The burner will operate normally once the electrode and wiring connections are dry.

COMPONENT ACCESS

Removing the Manifold/Valve Panel allows access to most components.

Removing the Manifold/Valve Panel:

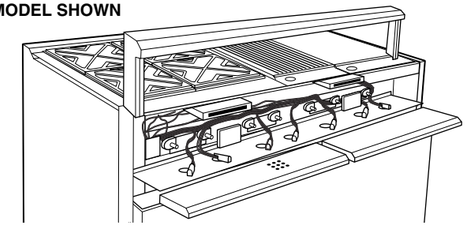
1. Remove the knobs from the control valves.
2. Remove the four Torx screws located at each corner of the Manifold/Valve Panel.
3. Carefully pull off the panel. **(Do not scratch the panel.)**

To remove the spark module, the landing ledge must also be removed.

Removing the Landing Ledge:

1. With the Manifold/Valve Panel removed, slide the right-side drip tray out (models with a grill or griddle).
2. Remove the two Phillips screws holding the static drip tray handle in place, and pull the handle off.
3. Remove the four Phillips head screws holding the landing ledge in place and lift the ledge off.

48″ MODEL SHOWN

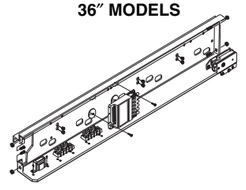


SPARK MODULE LOCATION AND DISASSEMBLY

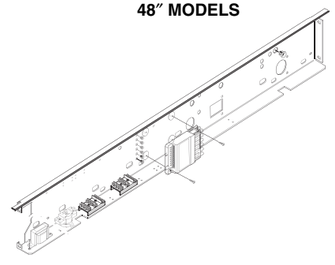
All models have a single spark module located behind the Manifold/Valve Panel. See “COMPONENT ACCESS.” To remove the module:

1. Remove the screws at the upper-right and lower-left corners of the module.
2. Pull the module up and out.

36″ MODELS



48″ MODELS



GRILL BURNER/GRIDDLE BURNER IGNITION SYSTEMS (ON SOME MODELS)

The grill burner and griddle burner are ignited by “Norton” style glowbar ignition systems. The ignition circuit consists of the grill switch (grill burner only), griddle thermostat (griddle burner only) the igniter and the thermal/safety valve (gas valve). The components are wired in series for each cooking function.

IMPORTANT:

THE IGNITER RESISTANCE DECREASES AS THE IGNITER SURFACE TEMPERATURE INCREASES.

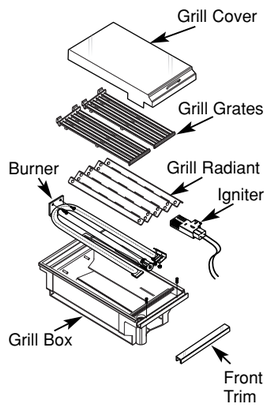
THE SAFETY VALVE OPERATES BY CURRENT, NOT BY VOLTAGE.

From a cold start, the igniter needs 30–60 seconds, with voltage applied, to reduce its electrical resistance enough to provide a minimum of 2.9 amps of current flow in the series circuit. This is the required current flow needed for the safety valve to open and supply gas to the burner. The glowbar should provide a steady current flow of 3.2 to 3.6 amps flowing in the circuit. At that point, the igniter temperature is between 1800°F and 2500°F. The igniter will remain energized at all times during burner operation. If the igniter glows red but does not draw at least 2.9 amps, the fault is usually with the igniter, not the valve. Always check the oven shut-off valve for a “Not On” condition.

GRILL REMOVAL

To remove the grill burner assembly:

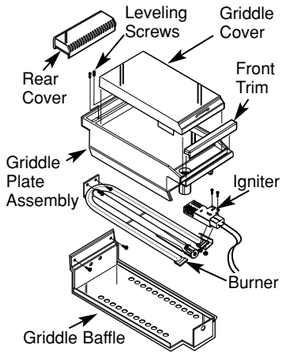
1. Remove the grill cover, grill grates and grill radiant.
2. Lift off the front trim from the front of the grill.
3. Remove the two Phillips head screws at the front of the grill box that secure the grill box to the cooktop.
4. Carefully lift up the grill box enough to access the wire nut connecting the igniter to the neutral and unscrew the nut. Unplug the wire going to the valve.
5. Lift the grill up and off the cooktop.



GRIDDLE REMOVAL

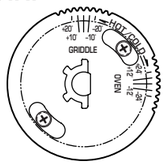
To remove the griddle assembly:

1. Remove the griddle cover.
2. Lift off the front trim from the front of the griddle.
3. Remove the two Phillips head screws at the front of the griddle that secure the griddle to the cooktop.
4. Remove the rear cover from the rear of the griddle.
5. Remove the center shipping screw and washer, if they have not already been removed—Do not remove the two outer leveling screws.
6. Lift the griddle assembly out of the opening and pull out the thermostat capillary from beneath the plate.



ADJUST GRIDDLE THERMOSTAT

To adjust the griddle thermostat:



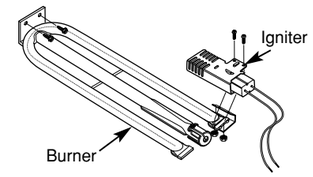
1. Pull the griddle control knob off.
2. On the back of the knob, loosen both screws, but do not completely remove.
3. With the back of the knob facing you, hold the outer edge of the knob with one hand and turn the back of the knob with the other hand.
4. **To raise the griddle temperature,** turn the back of the knob clockwise.
   To lower the griddle temperature, turn the back of the knob counterclockwise.
5. After the adjustment is made, retighten screws so they are snug, and replace knob.

GRIDDLE LEVELING

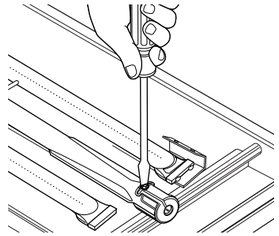
The two screws at the rear of the griddle plate assembly are leveling screws. They can be turned to level the griddle or to provide a forward slope to help grease and oils to drain away from the food being cooked.

GRILL OR GRIDDLE IGNITER REMOVAL

1. **For the grill –** Remove the grill cover, grates and grill radiant.
   For the griddle – Remove the griddle assembly (see "GRIDDLE REMOVAL").
2. Remove the two Phillips head screws at the rear of the burner and lift the burner out.
3. Remove the two flat head screws holding the igniter to the support bracket on the burner.
4. Replace with new igniter and replace all parts.
   NOTE: When aligned properly, the dimple on the igniter bracket should fit into the notch on the support bracket on the burner.



GRILL OR GRIDDLE AIR ADJUSTMENT

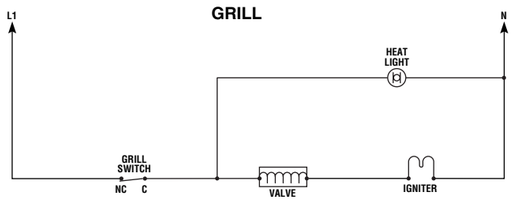


1. **For the grill –** Remove the grill cover, grates and grill radiant.
   For the griddle – Remove the griddle assembly (see "GRIDDLE REMOVAL").
2. **If adjusting the grill air shutter,** remove the two Phillips head screws at the rear of the burner and lift the burner out.
3. Loosen the screw on the burner air shutter using a flat head screwdriver.
4. Using a flat head screwdriver, move the air shutter in the appropriate direction.
   If the flame is too yellow, indicating insufficient air, adjust the shutter counterclockwise to increase the airflow.
   If the flame is too low or tends to lift away from the burner, indicating too much air, turn the shutter clockwise to reduce the airflow.
5. Test and adjust as needed for proper flame characteristics.

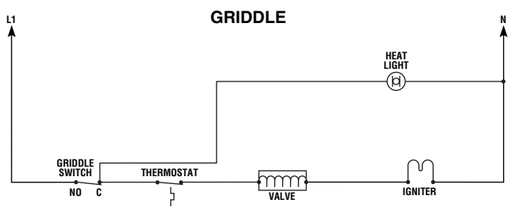
GRILL OR GRIDDLE OHMMETER TEST

COMPONENT	OHMS
IGNITER	45–400 OHMS COLD
VALVE	1.0 to 1.2 OHMS
SWITCH	0 OHMS CLOSED

GRILL

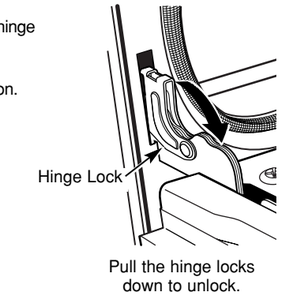


GRIDDLE

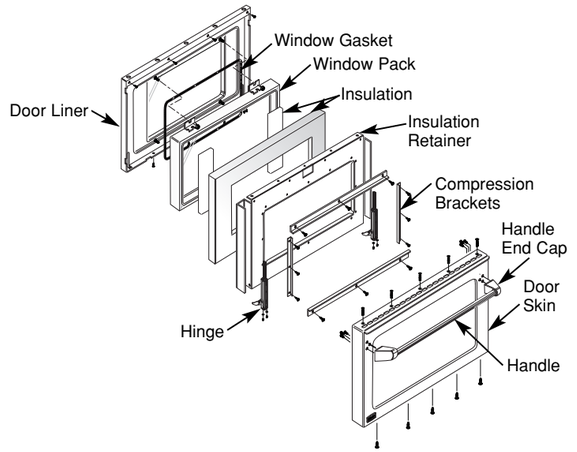


OVEN DOOR REMOVAL

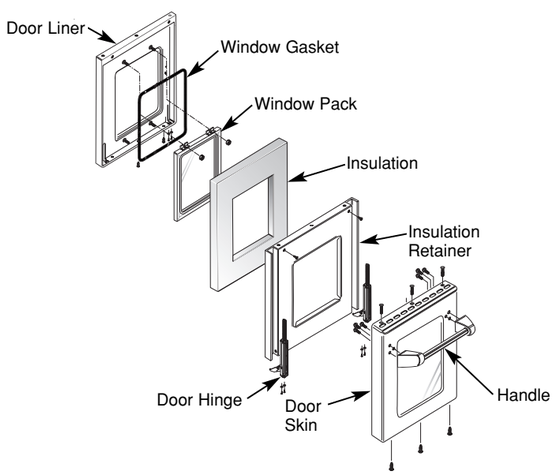
1. Fully open the door.
2. Each hinge has a hinge lock. Close the hinge latches down against the door frame.
3. Firmly grasp the door at the top sides.
4. Close the door to the near-vertical position.
5. Lift the door up and pull straight out.



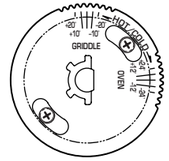
27″ OVEN DOOR ASSEMBLY



12″ OVEN DOOR ASSEMBLY (48″ RANGE MODELS ONLY)



OVEN THERMOSTAT CALIBRATION



The AVERAGE center oven temperature should be 350° ±15°F for baking. Customers may change the average center oven temperature by ±24°F to satisfy their own cooking needs.

To adjust the oven thermostat:

1. Pull the oven control knob off.
2. On the back of the knob, loosen both screws, but do not completely remove.
3. With the back of the knob facing you, hold the outer edge of the knob with one hand and turn the back of the knob with the other hand.
4. **To raise the oven temperature,** turn the back of the knob clockwise.
   To lower the oven temperature, turn the back of the knob counterclockwise.
5. After the adjustment is made, retighten screws so they are snug, and replace knob.

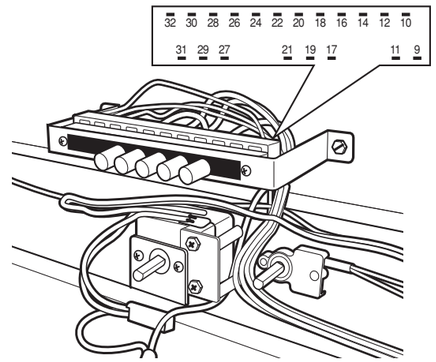
BLOWER THERMAL CUTOUT

The thermal cutout will turn on the blower in any mode of operation when it detects a temperature in the control area of approximately 140°F. The blower will cycle off when temperatures cool below 110°F.

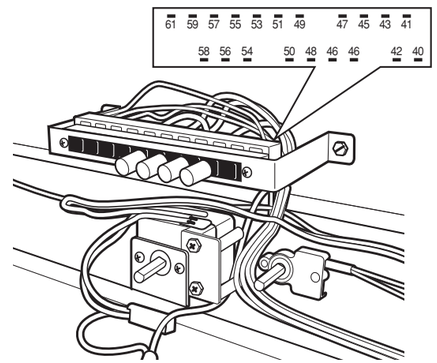
OVEN SELECT SWITCHES

Select switch operation can be checked with ohmmeter and strip circuits that show what contacts are closed in each mode of operation.

27″ OVEN



12″ OVEN (48″ RANGE MODELS ONLY)



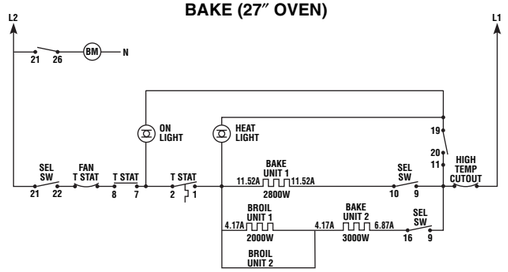
OVEN THERMOSTAT

The operation of the thermostat contacts can be checked with an ohmmeter and strip circuits.

Contacts 1 and 2 are the cycling contacts, which are controlled by the temperature of the capillary bulb. Contacts 7 and 8 will always be in the CLOSED position, except when in the CLEAN mode of operation.

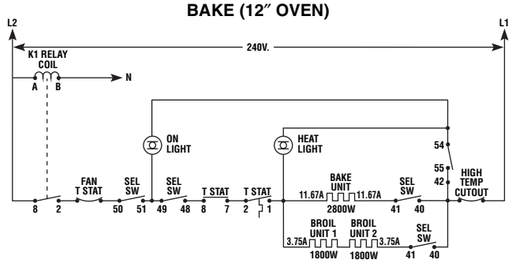
OVEN CIRCUITS

BAKE (27″ OVEN)

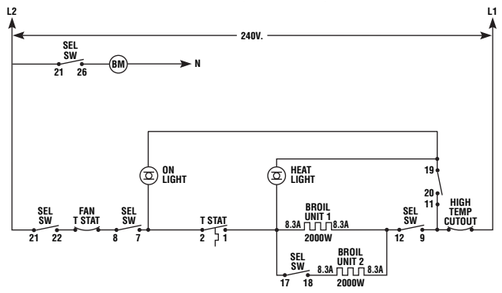


- During bake operation the broil unit is on 1/4 wattage while bake unit is energized.

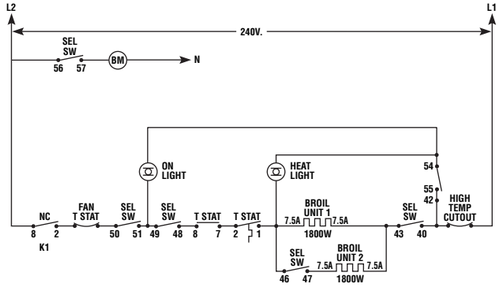
BAKE (12″ OVEN)



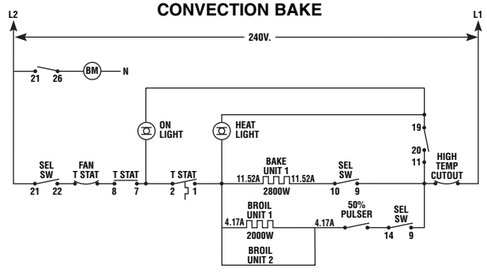
BROIL (27″ OVEN)



BROIL (12″ OVEN)

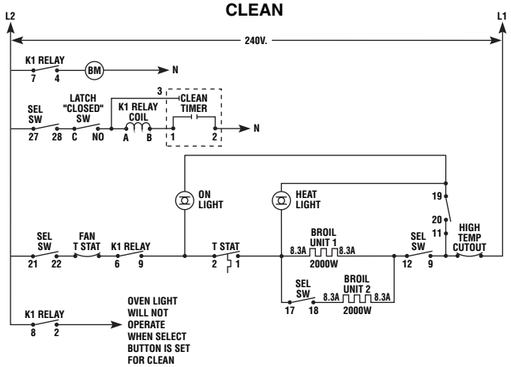


CONVECTION BAKE

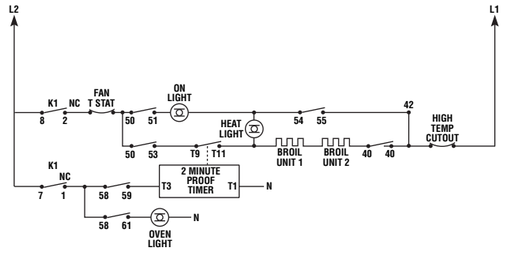


- The Convection Fan will turn on as soon as the CONV switch is pressed and will remain on until the OFF switch is pressed or another mode of operation is selected.
- Throughout the convection mode, anytime the bake unit cycles on, the broil unit will be cycled at approximately a 50% rate at 120 volts.

CLEAN



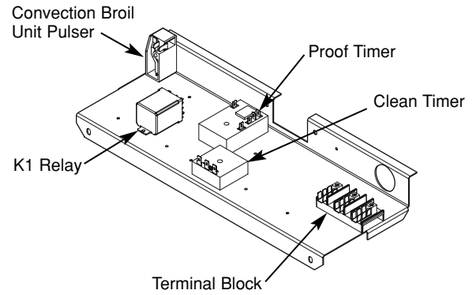
PROOF (12″ OVEN ONLY)



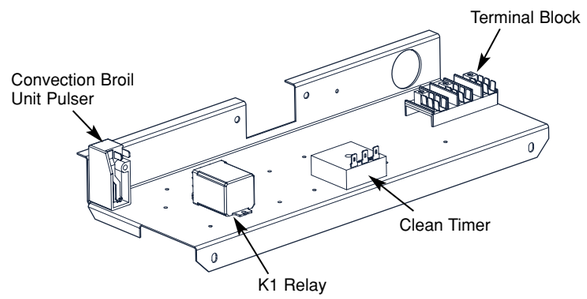
RELAYS, CONVECTION PULSER, TIMERS AND MAIN POWER CONNECTION

Electrical relays and timers are located in the compartment below the oven. Remove the two screws from the top corners of the bottom panel and pull straight off.

48″ RANGE MODELS



36″ RANGE MODELS

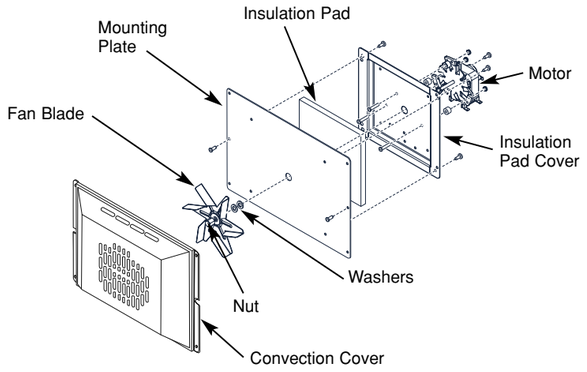


CONVECTION FAN ASSEMBLY

The convection fan assembly is located behind the large oven liner.

To remove the convection fan assembly:

1. Disconnect power and remove the oven door and racks.
2. Remove the fan cover mounted by 4 screws and spacers.
3. Remove the four screws securing the fan assembly to the mounting plate.
4. Carefully pull the fan assembly into the oven.
   NOTE: Fan assembly is heavy.
5. Disconnect the wires to remove the assembly from the oven and place the assembly on a flat surface for repair.



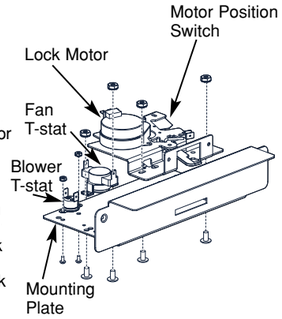
LOCK MOTOR ASSEMBLY

The lock motor assembly is located at the center top of the oven front frame. The assembly consists of the mounting plate, motor, micro switches, cam and hook assembly. To access the assembly:

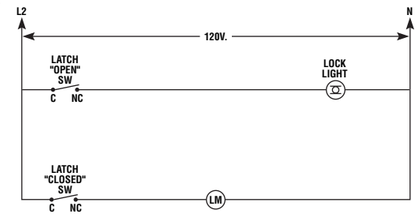
1. Open the oven door.
2. Remove the two Torx screws securing the mounting plate to the front frame and pull the assembly out.

Door lock motor operation:

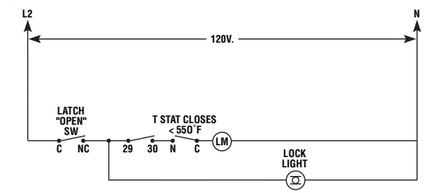
1. When the oven controls are set for CLEAN, power is applied to the lock motor.
2. The lock motor drives the cam that closes the Latch “CLOSED” switch. As the lock hook engages, the motor position switch will open, supplying power to the K1 relay, which turns the clean timer on.
3. At the end of the clean cycle, when the select switch is pushed to off or another mode of operation, the lock thermostat will energize the lock motor to drive the cam to the unlock position after the oven has cooled below 550°F.



LOCKING

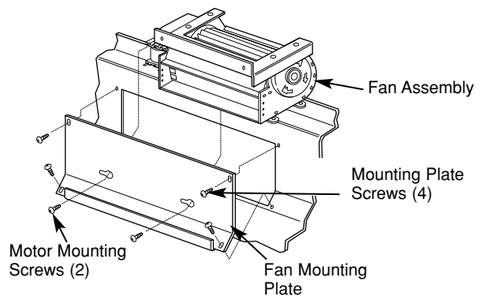


UNLOCKING



OVEN BLOWER MOTOR

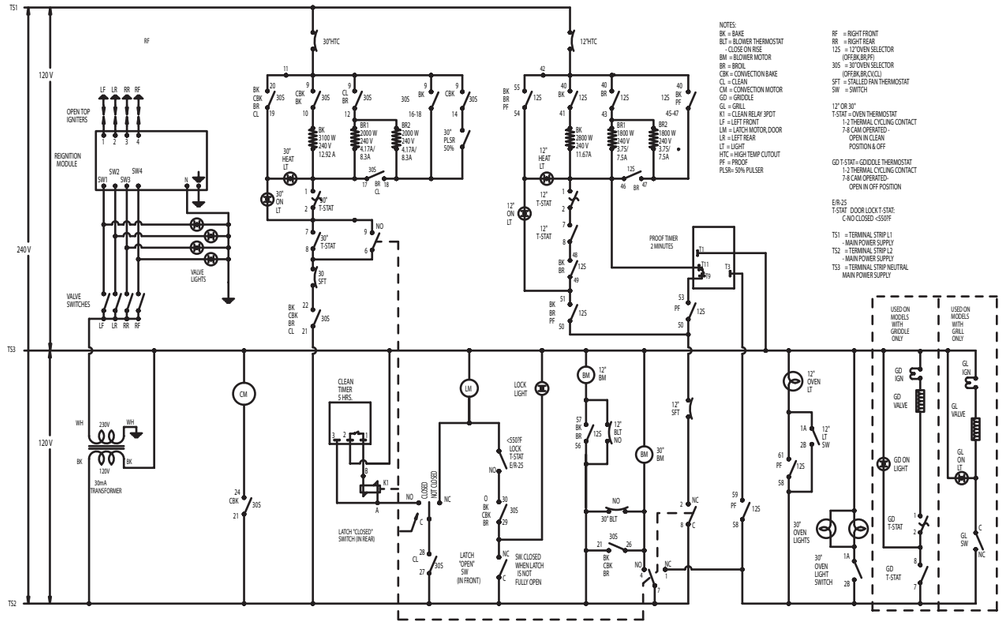
The blower motor assemblies are located on the back of the range above each oven.



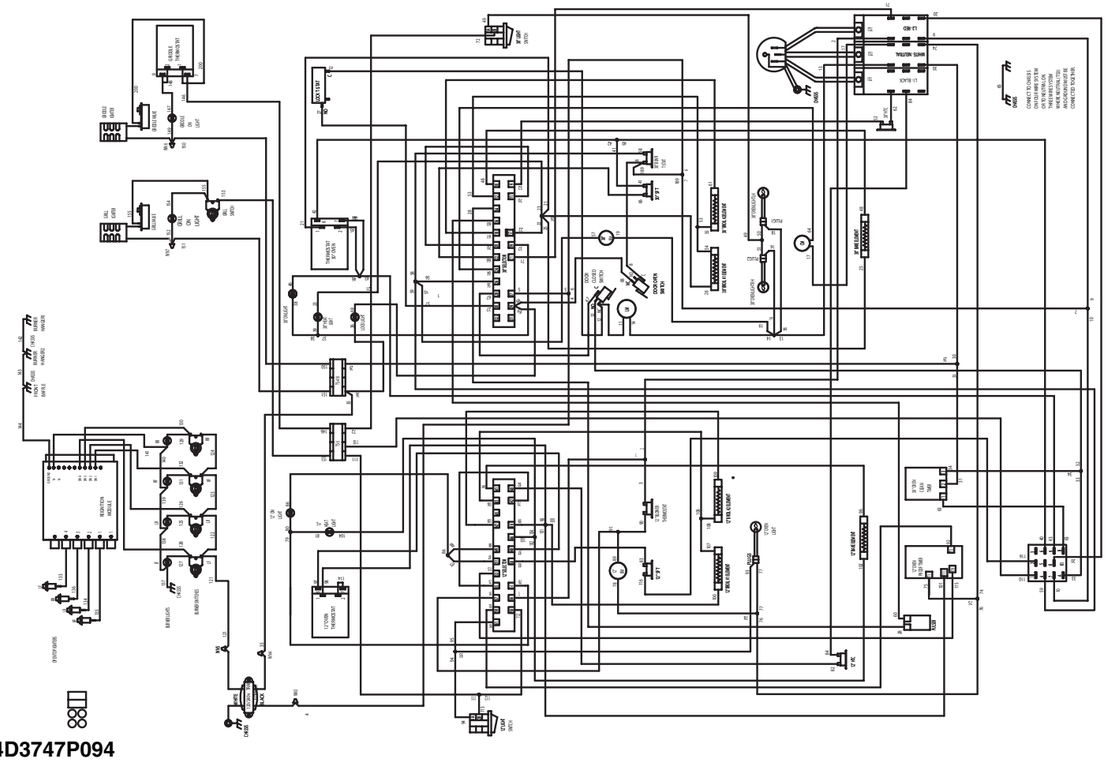
To remove the blower assembly:

1. Remove the cooktop burner assemblies.
2. Remove the four screws securing the Fan Mounting Plate and pull the plate with attached blower motor forward.
3. Remove the blower motor from its mounting plate by loosening the two screws on the plate and sliding the blower to the right.
4. Reinstall in reverse order.

48″ 4-BURNER RANGE WIRING SCHEMATIC



48″ 4-BURNER RANGE WIRING DIAGRAM



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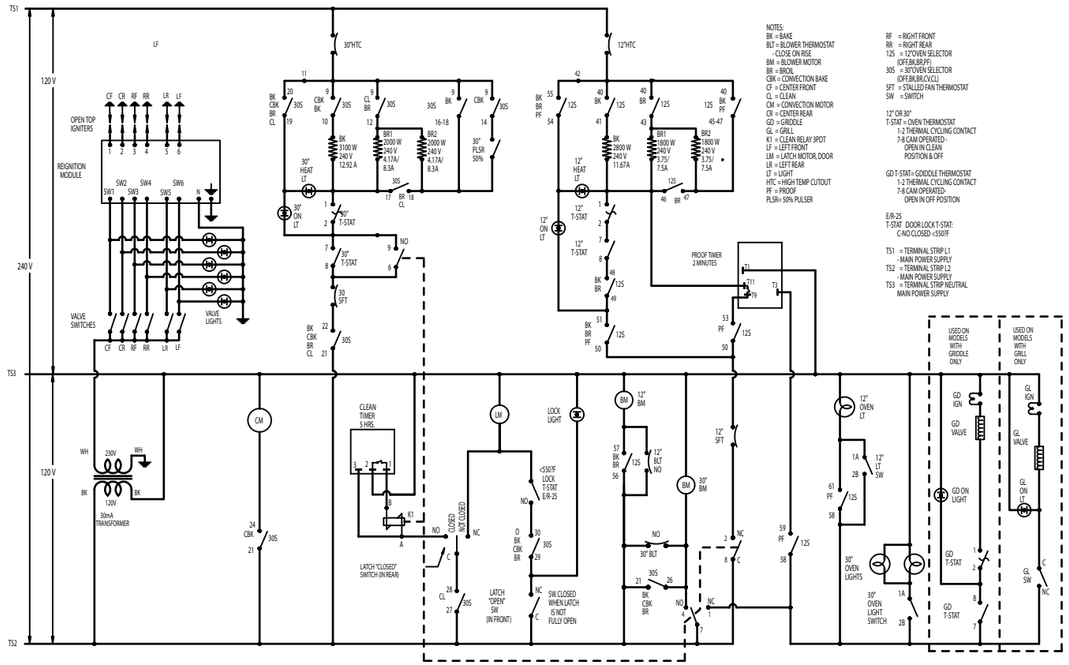
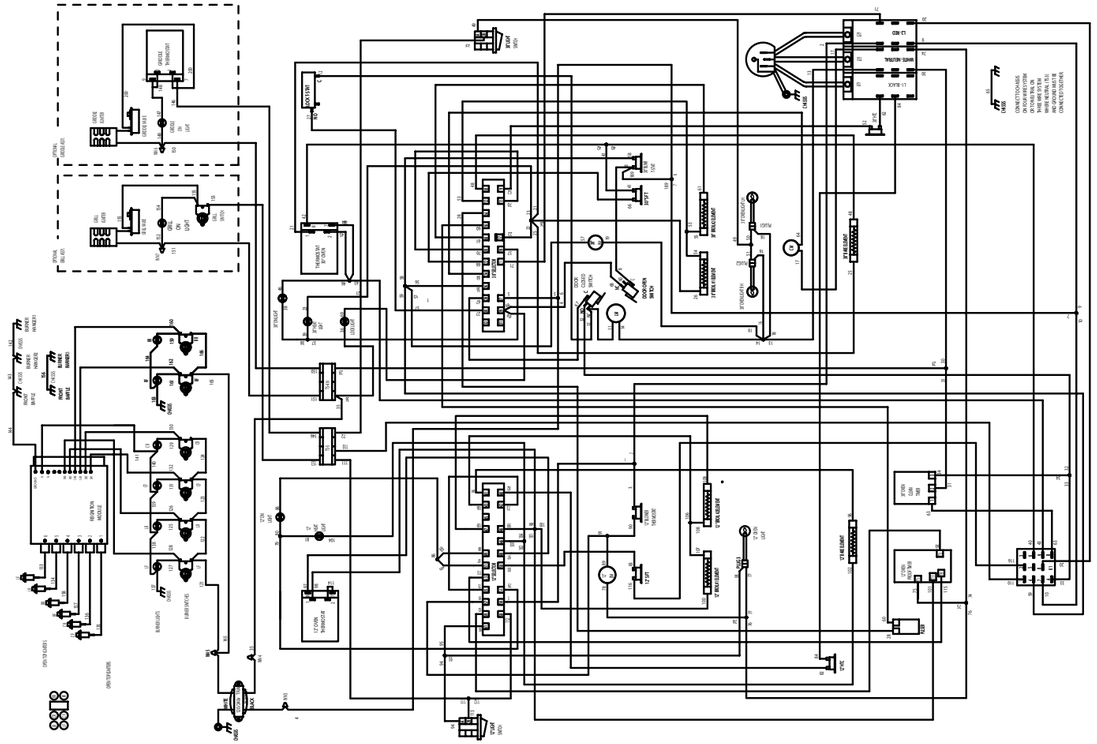
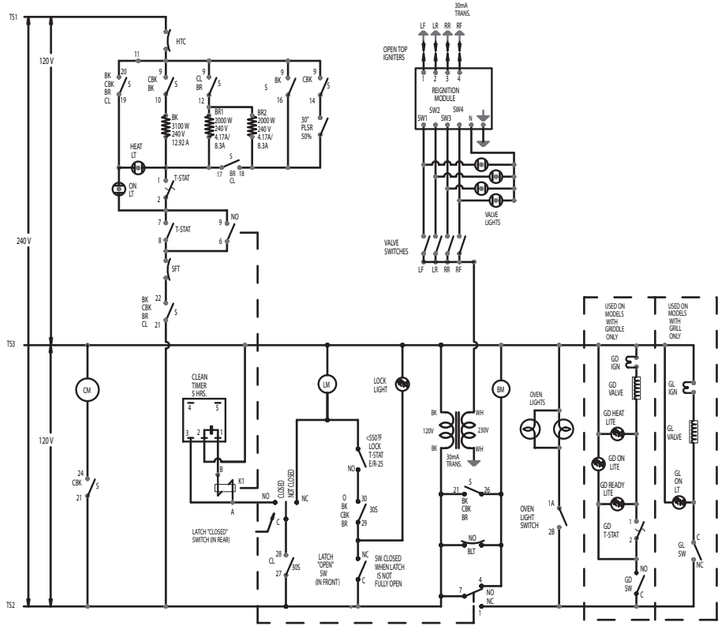
48″ 6-BURNER RANGE WIRING SCHEMATIC



48″ 6-BURNER RANGE WIRING DIAGRAM



36″ 4-BURNER RANGE WIRING SCHEMATIC



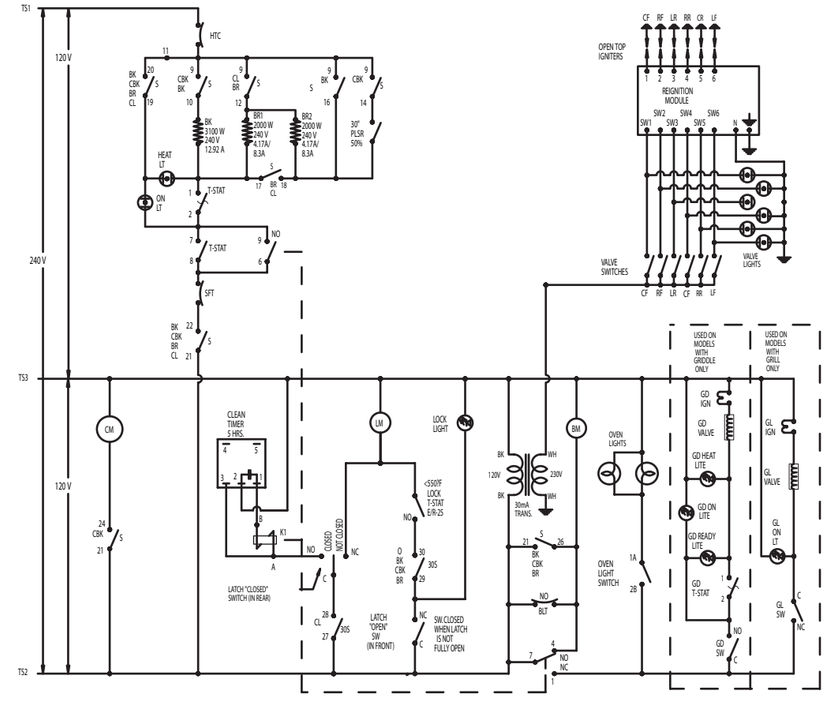
NOTES:
BK = BAKE
BLT = BLOWER THERMOSTAT CLOSE ON RISE
BM = BLOWER MOTOR
BR = BROIL
CBK = CONVECTION BAKE
CF = CENTER FRONT
CL = CLEAN
CM = CONVECTION MOTOR
CR = CENTER REAR
GD = GRIDDLE
GL = GRILL
K1 = CLEAN RELAY 3PDT
LF = LEFT FRONT
LM = LATCH MOTOR,DOOR
LR = LEFT REAR
LT = LIGHT
HTC = HIGH TEMP CUTOUT
PLSR= 50% PULSER
RF = RIGHT FRONT
RR = RIGHT REAR
S = OVEN SELECTOR (OFF,BK,BR,CBK,CL)
SFT = STALLED FAN THERMOSTAT
SW = SWITCH

T-STAT = OVEN THERMOSTAT
1-2 THERMAL CYCLING CONTACT
7-8 CAM OPERATED - OPEN IN CLEAN POSITION & OFF

T-STAT = DOOR LOCK T-STAT: E/R-25 C-NO CLOSED>550°F

TS1 = TERMINAL STRIP L1 MAIN POWER SUPPLY
TS2 = TERMINAL STRIP L2 MAIN POWER SUPPLY
TS3 = TERMINAL STRIP NEUTRAL MAIN POWER SUPPLY

36″ 6-BURNER RANGE WIRING SCHEMATIC



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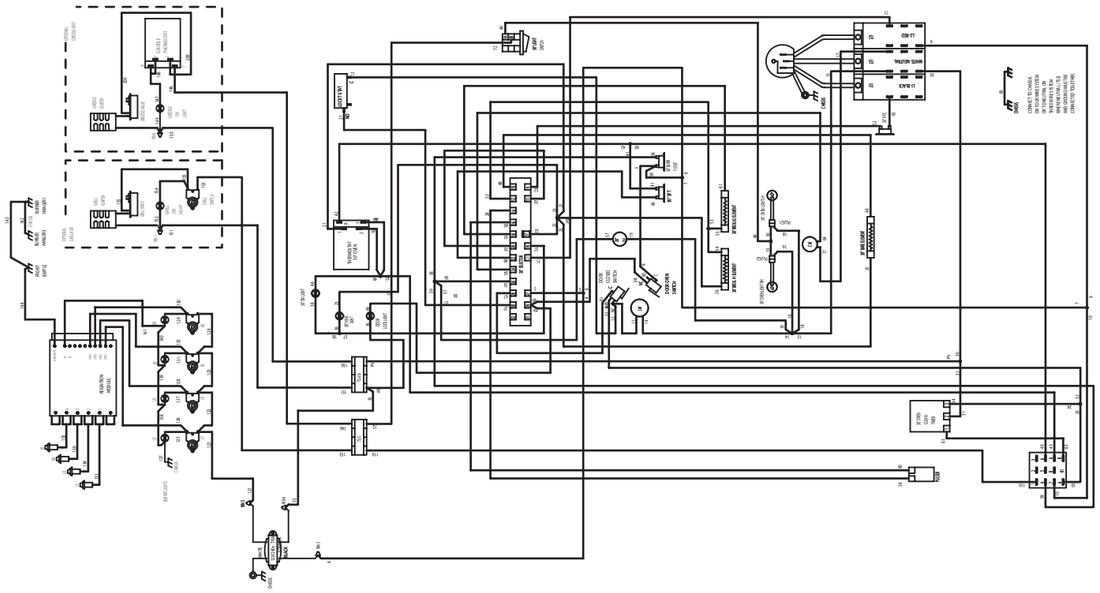
1-2 THERMAL CYCLING CONTACT
7-8 CAM OPERATED - OPEN IN CLEAN POSITION & OFF

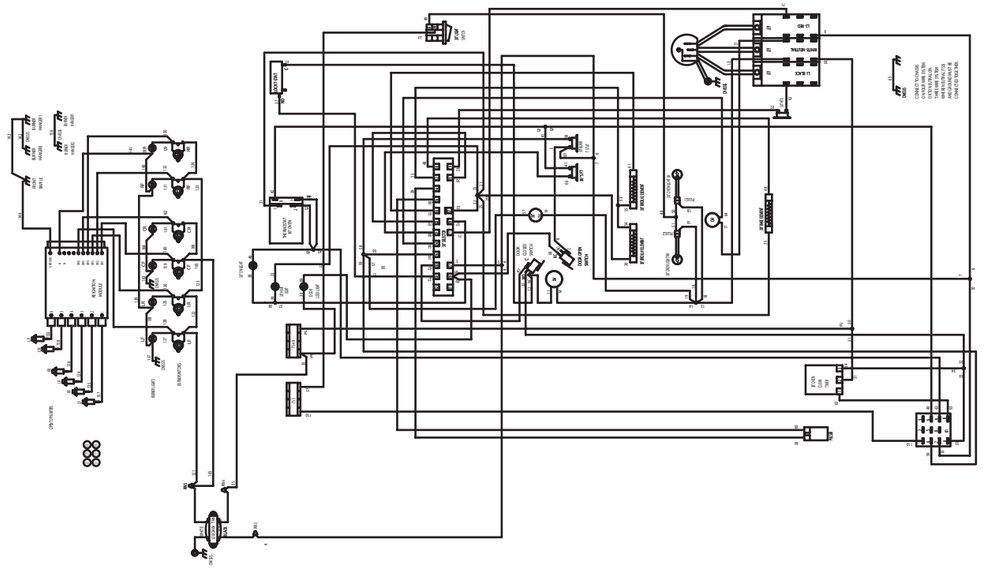
T-STAT = DOOR LOCK T-STAT: E/R-25 C-NO CLOSED>550°F

TS1 = TERMINAL STRIP L1 MAIN POWER SUPPLY
TS2 = TERMINAL STRIP L2 MAIN POWER SUPPLY
TS3 = TERMINAL STRIP NEUTRAL MAIN POWER SUPPLY

36″ 4-BURNER RANGE WIRING DIAGRAM



36″ 6-BURNER RANGE WIRING DIAGRAM



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